

READ ME

[illegible]

Table 1. Subsurface Sediment Core Rationale

Alternative F Mod Active Footprint Area	Sequential Core Count	Core Location #	Station ID	New Core Station	Re-Occupy Old Station	Old Station	Rationale	Proposed Core Depth (ft bml)	# of Samples	NAPL May Be Present	Additional Rationale
Deep Cores (N=60) (New Core Stations and Reoccupy Old Core Stations)											
RM 2E	1	4	PDI-SC-S004	X			Refine horizontal extent - north end	15	8	No	Better define horizontal gradient extent towards the north end (cores to the north do not tag bottom).
	2	7	PDI-SC-S007		X	C011-2	Refine vertical extent, unbounded to 16 ft bml	20-22	2	No	Reoccupy C011-2, which remains unbounded at depth with a concentration of 8,200 ug/kg PCB. Samples in proximity (C011-1, RB13, and C602) are all unbounded.
	3	9	PDI-SC-S009	X			Refine vertical and horizontal extent - southwest end	10	5	No	C604 is unbounded in vertical direction with a concentration of PCB between 75 and 200 ug/kg.
	4	10	PDI-SC-S010		X	C019-2	Refine vertical extent, unbounded to 16 ft bml	20-22	2	No	Reoccupy C019-2, which remains vertically unbounded with a concentration of 1,100 ug/kg PCB. Samples in proximity (C019-1, LWMC1, and C604) are all unbounded.
	5	11	PDI-SC-011	X			Refine horizontal and vertical extent	15	8	No	Better define horizontal gradient extent. No cores within 250 ft and nearby cores C020, C022, and C025-2 are vertically unbounded.
	6	15	PDI-SC-S015	X			Refine horizontal extent - southwest end	15	8	No	Better define horizontal towards the Navigation Channel. C605 did not tag bottom and had PCB concentration between 75 and 200 ug/kg.
RM 2.75E	7	19	PDI-SC-S019	X			Data at depth	15	8	No	No existing core in the dredge footprint. Nearby core C061, unbounded.
RM 3.5E	8	23	PDI-SC-S023		X	C0614	Vertical extent, unbounded to 10.9 ft bml	15-18	2	No	No existing core in the dredge footprint.
RM 3.8E (International Slip)	9	24	PDI-SC-S024	X			Refine horizontal extent	15	8	No	Improve concentration gradient. Spacing between cores +300ft.
	10	28	PDI-SC-S028	X			Refine horizontal extent	15	8	No	Improve concentration gradient between cores; vertical extent is different between them; spacing between cores +400 ft.
	11	30	PDI-SC-S030		X	LWMC3	Refine vertical extent in Alt F dredge footprint	15	2	No	LWMC3 unbound vertically with a concentration of PCB at 5,000 ug/kg for the entire core depth of 10 ft bml.
	12	31	PDI-SC-S031	X			Refine horizontal and vertical extent	15	8	No	Better refine horizontal and vertical extent of remediation area. Nearby grab SED11 had a PCB concentration of 2,000 ug/kg and nearby core C094 had a concentration of 2,100 ug/kg.
	13	32	PDI-SC-S032	X			Riverbank shallow core	15	8	No	Closest sample SED14 is vertically unbounded. Sample approximately 3 ft bml with a concentration of 1,100 ug/kg. Refine horizontal extent between cap and dredge.
RM3.9W	14	38	PDI-SC-S038	X			Refine horizontal and vertical extent	15	8	No	No historical cores in proposed dredge area.
RM 4W to 5W	15	53	PDI-SC-S053	X			Refine horizontal and vertical extent	15	8	No	Closest core is unbounded C626. Additionally, no historical cores in proposed dredge area.
RM 4.5E		-					No cores needed, ample amount of data and all shallow exceedances, Alt F dredge				
RM 4.51E	16	55	PDI-SC-S055		X	HC-S-42	Refine vertical extent	10	2	No	Reoccupy HC-S-42, which was vertically unbounded, core driven ~5 ft bml with a PAH concentration of 220,000 ug/kg. Help refine horizontal extent in nearshore area.
RM 4.52E		-					No cores needed, ample amount of data and all shallow exceedances, Alt F dredge				
RM 4W to 5W	17	62	PDI-SC-S062		X	C136	Refine vertical extent	15	2	No	Reoccupy C136, which is vertically unbounded, core driven ~15 ft bml with a PAH concentration of 80,000 ug/kg. No other core in existing dredge footprint.
	18	65	PDI-SC-S065		X	C142	Refine vertical extent	15	2	No	Reoccupy C142, which is vertically unbounded, core driven ~10 ft bml with a PAH concentration of 240,000 ug/kg. Hit refusal at 12.9'
	19	70	PDI-SC-S070		X	C179	Refine vertical extent	15	2	No	Reoccupy C179, which is vertically unbounded, core driven ~10 ft bml with a PAH concentration of 90,000 ug/kg. Next to C182, also unbounded vertically with a concentration of ~25,000 ug/kg.

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RM 5 to 6	20	83	PDI-SC-S08 3	X			Refine vertical/horizontal extent	15	8	No	Nearby historical core C221 Did not tag bottom and had a total PAH concentration >68,900 ug/kg.
	21	86	PDI-SC-S08 6	X				15	8	No	Nearby historical core PH15-13 did not tag bottom and had a total PAH concentration >85,700 ug/kg.
RM 5.5E	22	85	PDI-SC-S08 5	X			No existing cores in dredge footprint	15	8	No	No existing cores in dredge footprint, one core nearby vertically bounded at 10 ft bml; Alt F dredge/cap.
	23	88	PDI-SC-S08 8	X				15	8	No	No existing cores in dredge footprint, one core nearby vertically bounded at 10 ft bml; Alt F dredge/cap.
	24	92	PDI-SC-S09 2	X				15	8	No	No existing cores in dredge footprint, one core nearby vertically bounded at 10 ft bml; Alt F dredge/cap.
RM 6W	25	98	PDI-SC-S09 8	X			Define vertical extent	15	8	No	Horizontally define Navigation Channel. Need core to define vertical extent. CS003 was less than 1 foot bml, with a concentration of 34,800 ug/kg. Also refine Navigation Channel extent.
	26	103	PDI-SC-S10 3	X			Horizontal delineation along Navigation Channel, also refine vertical extent for proximal cores	15	8	No	Horizontally define Navigation Channel. No core currently within proposed dredge footprint.
	27	109	PDI-SC-S10 9	X				15	8	No	Refine concentration gradient towards Navigation Channel and at depth. Closest cores ~250 ft away DGS-08C (in Navigation Channel, PAH concentration of 1,800,000 ug/kg). Downriver of LWMC11, unbounded sample with a PAH concentration of 8,400,000 ug/kg and DGS-19SC with a PAH concentration of 4,500,000 ug/kg.
	28	108	PDI-SC-S10 8		X	C244	Define vertical extent	15	2	No	Reoccupy C244 which is vertically unbounded, core driven ~10 ft bml with a PCB concentration of 250 ug/kg. Southern edge of proposed dredge footprint.
	29	113	PDI-SC-S11 3		X	C258	Refine vertical extent	15-18	2	No	Reoccupy C258 which is vertically unbounded to ~10 ft bml with a PAH concentration of 290,000 ug/kg.
RM 6.8E	30	131	PDI-SC-S13 1	X			Refine vertical/horizontal extent in the low spot near C291	15	8	Yes	Distance between cores is greater than 300 ft. Two of the four closest cores are unbounded vertically with PCB concentrations of 250 ug/kg and 750 ug/kg.
RM 7E	31	144	PDI-SC-S14 4	x			Refine horizontal and vertical extent	15	8	No	Proposed dredge area with historical cores greater than 250 ft away.
RM 7W	32	136	PDI-SC-S13 6	X			Refine vertical extent	15	8	No	Proposed dredge area around C311, DGS-37SC, SD072, and C316 cores are all vertically unbounded and have PAH concentrations >50,000 ug/kg and up to 570,000 ug/kg.
	33	139	PDI-SC-S13 9	X			Refine vertical extent	15	8	Yes	Proposed dredge area around WB-66 is unbounded vertically and horizontally and has 2,3,7,8-TCDD concentrations up to 0.0015 ug/kg.
	34	146	PDI-SC-S14 6	X			Define vertical extent	15	8	Yes	Proposed dredge area around C679 is unbounded vertically and has a 2,3,7,8-TCDD concentration of 0.003 ug/kg.
	35	150	PDI-SC-S15 0	X			Define vertical extent	15	8	Yes	Proposed dredge area around LWMC14 is unbounded vertically and has a 2,3,7,8-TCDD concentration of 0.002 ug/kg. Surrounding unbounded samples are WB-37, WB-41, and SD092 with concentrations up to 0.007 ug/kg.
	36	151	PDI-SC-S15 1	X			Define vertical extent	15	8	Yes	Proposed dredge area south of WB-34. WB-34 is unbounded vertically and has a 2,3,7,8-TCDD concentration of 0.001ug/kg.
	37	155	PDI-SC-S15 5	X			Define extent	15	8	No	No historical cores within proposed dredge footprint.
RM 7W to 8W	38	157	PDI-SC-S15 7		X	C690	Refine vertical extent	20	2	No	Proposed dredge area with no historical cores.
	39	163	PDI-SC-S16 3	X			Inside pier has no cores	15	8	No	Inside proposed dredge area has no core samples.

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RM 8E to 9E (Swan Island Lagoon)	40	172	PDI-SC-S172	X			Refine vertical extent	15	8	No	Area between C372 and PSY18C (cores are over 400 ft apart) had PCB concentrations of ~200 ug/kg and >500 ug/kg, respectively. C372 is unbounded vertically.
	41	176	PDI-SC-S176	X			Refine vertical extent	15	8	No	Define vertical extent between C702 and C703. Additionally, provide additional coverage near pier area where there are limited historical cores.
	42	178	PDI-SC-S178	X			Refine vertical extent	15	8	No	Area between C364 and PSY20C (cores are over 600 ft apart) had max a PCB concentration of >250 ug/kg and 2,300 ug/kg, respectively.
	43	191	PDI-SC-S191	X			Refine vertical extent	15	8	No	Proposed dredge area SD133 was unbounded vertically and had a PCB concentration of 2,400 ug/kg.
	44	198	PDI-SC-S198	X			Refine vertical extent	15	8	No	Better refine vertical gradient between C379 and PSY11C (cores are over 600 ft apart) and had a max PCB concentration of >750 ug/kg and >7.5 ug/kg, respectively.
	45	203	PDI-SC-S203	X			Refine horizontal extent	15	8	No	Limited horizontal cores within proposed Swan Island Lagoon dredge footprint.
	46	213	PDI-SC-S213	X			Refine horizontal/vertical extent	15	8	No	Gradient near C397 (cores up and down river are over 250 ft apart). C397 is vertically unbounded and had a max PCB concentration of >500 ug/kg.
	47	229	PDI-SC-S229		X	C421	Refine vertical extent	15	2	No	Only one core within pier area and over 200 ft to nearest sample location.
	48	230	PDI-SC-S230	X			Refine vertical extent	15	8	No	C405 and SD141 (cores are over 300 ft apart) and both are vertically unbounded. The max PCB concentration between the two cores was >500 ug/kg.
	49	238	PDI-SC-S238	X			Refine horizontal and vertical extent	15	8	No	Cores are over 250 ft apart and vertically unbounded.
RM9.1E	50	228	PDI-SC-S228	X			Refine horizontal and vertical extent	15	8	No	No historical cores in proposed dredge footprint.
RM 8W to 8.5W	51	218	PDI-SC-S218	X			Collect bank sample near C431	15	8	No	Proposed dredge area north east of C431, edge of dredge area is over 300 ft from nearest C431 core.
	52	221	PDI-SC-S221		X	C450	Refine vertical extent, hit refusal	15	2	No	Proposed dredge area around C450 is unbounded vertically to 10 ft bml and has a PCB concentration of 2,200 ug/kg.
RM 8.75W	53	222	PDI-SC-S222	X			Refine vertical extent	15	8	No	Area west of C455; C455 has a max PCB concentration of 6,000 ug/kg.
	54	226	PDI-SC-S226	X			Refine vertical extent	15	8	No	Proposed dredge area around LWMC19 is unbounded vertically and has a PCB concentration of 2,200 ug/kg.
RM 9.8W	55	248	PDI-SC-S248	X			Define horizontal/vertical extent	15	8	No	No historical cores within proposed dredge footprint.
	56	254	PDI-SC-S254	X			Cores are vertically unbounded, but there is 10 ft of clean overburden	15	8	No	Proposed dredge area north east of C738 and C739; both cores are vertically and horizontally unbounded with max concentrations >500 ug/kg of PCB.
	57	255	PDI-SC-S255	X			Refine nearshore extent	15	8	No	Proposed dredge area west of LWMC24. LWMC24 is vertically unbounded with max concentration >750 ug/kg of PCB.
	58	256	PDI-SC-S256		X	LWMC24	Refine vertical extent, unbounded to 10 ft bml	15	2	No	LWMC24 is unbounded vertically with a max PCB concentration >750 ug/kg and southward is more than 400 ft from shoreline, no nearshore cores.
	59	257	PDI-SC-S257	X			Cores are vertically unbounded, but there is 10 ft of clean overburden	15	8	No	Gradient between C739 and LWMC24; both cores are vertically unbounded, with max concentrations > 500 ug/kg of PCB.
RM10.8E	60	263	PDI-SC-S263	X			Define horizontal/vertical extent	15	8	No	No historical cores within proposed dredge footprint.

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Nearshore Cores (N=30) (shallow cores)											
RM 2E	61	2	PDI-SC-S002	X			Better define vertical and horizontal extent in shallow bank areas	6	3	No	Better define horizontal gradient extent towards the north end. Limited historical core data.
	62	14	PDI-SC-S014	X				6	3	No	Within a proposed dredge area and no historical core within 250 ft.
RM 3.5E	63	22	PDI-SC-S022	X				6	3	No	No existing core in proposed dredge footprint.
RM 3.8E (International Slip)	64	33	PDI-SC-S033	X				6	3	No	High concentration of unbounded cores with PCB concentrations >26,000 ug/kg (C092).
	65	34	PDI-SC-S034	X				6	3	No	No historical coverage in proposed dredge footprint.
	66	36	PDI-SC-S036	X				6	3	No	Close to historical cores C096 and C099. PCB concentrations range from 1,600 ug/kg to <500 ug/kg.
RM 4E	67	42	PDI-SC-S042	X				6	3	No	No historical cores within 250 ft.
RM 4.1W	68	45	PDI-SC-S045	X				6	3	No	Historical core SD017 unbounded to 4 ft depth with a PAH concentration >68,900 ug/kg.
RM 4.52	69	61	PDI-SC-S061	X				6	3	No	Spatial coverage, near historical cores T4-VC29 and T4-B411-06, which have PCB concentrations of 1,300 ug/kg and >75ug/kg, respectively.
RM 4.9W	70	64	PDI-SC-S064	X				6	3	No	No historical cores in proposed dredge area.
	71	66	PDI-SC-S066	X				6	3	No	Spatial coverage. Historical core near proposed area SGP-14 had a PAH concentration of >34,800 ug/kg and historical near core C160 was vertically unbounded to 8 ft depth.
RM 5.6E	72	82	PDI-SC-S082	X				6	3	No	Near historical core C203, was vertically unbounded to 10 ft depth and had a PCB concentration of 2,800 ug/kg and located approximately 230 ft away. Historic core C199 was vertically bounded at 6 feet with a PCB concentration greater than 75 ug/kg to 6 ft and located approximately 200 ft away.
RM 5.7W	73	95	PDI-SC-S095	X				6	3	No	Near historical core C240 is vertically unbounded to 3 ft depth bml and had a PAH concentration >128,000 ug/kg. Over 200 ft from nearest core.
RM 6.2W	74	105	PDI-SC-S105	X				6	3	No	Near historical cores SDDC24SB and SDDC25SB, vertically unbounded to 4 ft depth bml with PAH concentrations of 710,000 and 250,000 ug/kg, respectively.
RM 6.2E	75	112	PDI-SC-S112	X				6	3	No	Proposed dredge area with no historical cores within footprint.
RM 6.5W	76	117	PDI-SC-S117	X				6	3	Yes	Spatial coverage. No historical cores within 250 ft in proposed dredge footprint. Nearby historical core C136 has a 2,3,7,8-TCDD concentration >0.0006 ug/kg.
RM 6.7E (Willamette Cove)	77	121	PDI-SC-S121	X				6	3	No	Proposed dredge with no historical cores within footprint.
RM 6.8W	78	127	PDI-SC-S127	X				6	3	No	Proposed dredge with no historical cores within footprint.
RM 6.8E (Willamette Cove)	79	129	PDI-SC-S129	X				6	3	No	Proposed dredge with no historical cores within footprint.
RM 7W	80	140	PDI-SC-S140	X				6	3	No	Proposed dredge area with no historical cores within 200 ft.
	81	154	PDI-SC-S154	X				6	3	No	Nearby historical cores contain 2,3,7,8-TCDD concentrations up to 0.004 ug/kg. No shallow bank cores within 500 ft.
RM 8E to 9E (Swan Island Lagoon)	82	185	PDI-SC-S185	X				6	3	No	Spatial coverage between historical cores C364 and PSY16C which have PCB concentrations of 200 and 750 ug/kg, respectively.
	83	188	PDI-SC-S188	X				6	3	No	Spatial coverage. Nearby historical cores C392 and PSY30C have PCB concentrations of >750 ug/kg and <50 ug/kg, respectively.
	84	192	PDI-SC-S192	X				6	3	No	Nearby historical core DMMU1 was vertically unbounded to 10 ft depth with PCB concentration >250 ug/kg.
	85	219	PDI-SC-S219	X				6	3	No	No historical cores within 250 ft.
RM 8.1W	86	189	PDI-SC-S189	X				6	3	No	Proposed dredge with no historical cores within dredge footprint. Nearby historical core C431 had a PCB concentration of 1,100 ug/kg.
RM 9W	87	232	PDI-SC-S232	X				6	3	No	No historical core in proposed dredge footprint.
	88	245	PDI-SC-S245	X				6	3	No	Spatial nearshore coverage. Nearby historical core C477 vertically unbounded to 7 ft bml with a PCB concentration >500 ug/kg.
RM 9.6E	89	251	PDI-SC-S251	X				6	3	No	Proposed dredge location with no historical cores.
RM 10.2	90	260	PDI-SC-S260	X				6	3	No	Proposed remediation footprint with no historical cores.

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Total # Deep Cores / Samples				46	14				393		
Total # of Shallow Cores / Samples				30					90		
Total Core Tube Length (Linear Ft)								1,015			
Total # of Subsurface Samples									483		

483

Notes:
 Deep cores are collocated with an SMA surface sediment grab. There are a total of 60 collocated grabs (44 New Core Locations, 16 Reoccupy Core Locations).
 Proposed core stations from RM 11E have been removed. The PDI study will rely on recent data collected within the SMA footprint.
 Sample names will include Station ID and depth of sampling interval.
 NAPL prediction based on Figures 3.2-1 and 3.2-2 from FS dated July 8, 2015.

Acronyms:
 ug/kg = microgram per kilogram; bml = below mudline; E = east; ft = feet; PAH = polycyclic aromatic hydrocarbon; PCB = polychlorinated biphenyl; PDI = pre-remedial design investigation; PRP = potentially responsible party; RM = river mile; SMA = sediment management area; W = west

Table 2. Summary of Subsurface Sediment Sample Types, Numbers, and Analytes

Subsurface Sediment Core Type / Purpose	No. of Stations	No. of Samples	Analyte List (focused COCs)				
			PCB Aroclors	PAHs	PCDD/F	DDx	Grain size and TOC
Deep Core Stations	60	393	X	X	X	X	X
Nearshore (Shallow) Cores	30	90	X	X	X	X	X
Archive 1 ft Interval near bottom of core	TBD	TBD	Archive pending 2 ft results				
Total Count	90	483					

Notes:

Deep Cores are a combination of New Core Stations and Reoccupy Core Stations which range in depth from 10 to 20 feet.

Sample Collection will occur every 2 feet of depth except for reoccupy core stations.

Reoccupy Core Stations will have two samples collected (one at the historical depth and one 2 feet lower).

All Shallow ~~Bank~~ Core Stations will be to a **target** depth of 6 feet.

Deep Core Stations may have a co-located surface sediment grab sample (0 to 30 cm target depth).

Focused COCs include: DDx, PCB Aroclors, PAHs, PCDD/Fs. **Grain Size and TOC also analyzed.**

Selected fine-grained samples (up to 10) will also be analyzed for Atterberg Limits.

Acronyms:

COC = contaminant of concern; DDx = sum of dichlorodiphenyltrichloroethane and its derivatives; PAHs = polycyclic aromatic hydrocarbon; PCBs = polychlorinated biphenyls; PCDD/Fs = polychlorinated dibenzo-p-dioxins and furans; TBD = to be determined; TOC = total organic carbon

Table 3. Station Identification Scheme, Mudline Elevations, and Location Coordinates

Station ID	Core Description	Mudline Elevation (CRD - Feet) ^a	Proposed Location Coordinates (NAD83 [2011]; Intl Feet) ^b		Sequential Station Count
			<i>Easting</i>	<i>Northing</i>	
PDI-SC-S002	Shallow Core	N/A	7617870	724983	1
PDI-SC-S004	Deep Core	-3.5	7617674	724708	2
PDI-SC-S007	Deep Core	N/A	7617494	724204	3
PDI-SC-S009	Deep Core	-36.1	7617132	723879	4
PDI-SC-S010	Deep Core	-23.9	7617252	723775	5
PDI-SC-S011	Deep Core	-8.5	7617185	723519	6
PDI-SC-S014	Shallow Core	N/A	7617131	723185	7
PDI-SC-S015	Deep Core	-33.0	7616871	722877	8
PDI-SC-S019	Deep Core	-26.8	7616724	721584	9
PDI-SC-S022	Shallow Core	N/A	7617439	718310	10
PDI-SC-S023	Deep Core	-48.7	7617275	717743	11
PDI-SC-S024	Deep Core	-38.7	7618163	717155	12
PDI-SC-S028	Deep Core	-24.5	7619022	717184	13
PDI-SC-S030	Deep Core	-13.6	7619376	717045	14
PDI-SC-S031	Deep Core	-22.4	7619579	717144	15
PDI-SC-S032	Deep Core	-9.2	7619801	717238	16
PDI-SC-S033	Shallow Core	-1.9	7619895	717023	17
PDI-SC-S034	Shallow Core	N/A	7620011	717204	18
PDI-SC-S036	Shallow Core	N/A	7618072	716752	19
PDI-SC-S038	Deep Core	N/A	7616637	715830	20
PDI-SC-S042	Shallow Core	N/A	7618436	715951	21
PDI-SC-S045	Shallow Core	N/A	7617224	714365	22
PDI-SC-S053	Deep Core	N/A	7617469	713721	23
PDI-SC-S055	Deep Core	-9.3	7619660	713673	24
PDI-SC-S061	Shallow Core	N/A	7620462	713053	25
PDI-SC-S062	Deep Core	-12.4	7618175	712584	26
PDI-SC-S064	Shallow Core	N/A	7618256	712076	27
PDI-SC-S065	Deep Core	N/A	7618588	711681	28
PDI-SC-S066	Shallow Core	N/A	7618929	711020	29
PDI-SC-S070	Deep Core	-9.7	7619684	710016	30
PDI-SC-S082	Shallow Core	N/A	7622325	708748	31
PDI-SC-S083	Deep Core	-50.6	7621575	708069	32
PDI-SC-S085	Deep Core	N/A	7622302	708578	33
PDI-SC-S086	Deep Core	-50.8	7621839	707824	34
PDI-SC-S088	Deep Core	-36.9	7622381	708290	35
PDI-SC-S092	Deep Core	N/A	7622708	708151	36
PDI-SC-S095	Shallow Core	-8.6	7622008	707161	37
PDI-SC-S098	Deep Core	-45.6	7622652	706762	38
PDI-SC-S103	Deep Core	-39.8	7623053	706373	39
PDI-SC-S105	Shallow Core	N/A	7623049	706035	40
PDI-SC-S108	Deep Core	-11.3	7623957	706997	41
PDI-SC-S109	Deep Core	-44.6	7623821	706069	42
PDI-SC-S112	Shallow Core	N/A	7624572	706744	43
PDI-SC-S113	Deep Core	-40.5	7624300	705634	44
PDI-SC-S117	Shallow Core	N/A	7624686	705196	45
PDI-SC-S121	Shallow Core	N/A	7625899	706030	46
PDI-SC-S127	Shallow Core	N/A	7625928	704408	47
PDI-SC-S129	Shallow Core	N/A	7626904	705849	48
PDI-SC-S131	Deep Core	-31.6	7626895	705603	49
PDI-SC-S136	Deep Core	N/A	7626539	703726	50
PDI-SC-S139	Deep Core	-7.4	7627058	703342	51

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			<i>Easting</i>	<i>Northing</i>	
PDI-SC-S140	Shallow Core	N/A	7627140	702977	52
PDI-SC-S144	Deep Core	N/A	7628759	704114	53
PDI-SC-S146	Deep Core	-16.4	7627591	702896	54
PDI-SC-S150	Deep Core	-7.0	7627909	702475	55
PDI-SC-S151	Deep Core	-28.8	7628124	702359	56
PDI-SC-S154	Shallow Core	N/A	7628333	701890	57
PDI-SC-S155	Deep Core	N/A	7628616	701529	58
PDI-SC-S157	Deep Core	-37.9	7628992	700980	59
PDI-SC-S163	Deep Core	-25.8	7629268	700352	60
PDI-SC-S172	Deep Core	-13.1	7633011	701895	61
PDI-SC-S176	Deep Core	-43.3	7632595	701151	62
PDI-SC-S178	Deep Core	-34.4	7632913	701345	63
PDI-SC-S185	Shallow Core	N/A	7633644	701791	64
PDI-SC-S188	Shallow Core	N/A	7632478	700346	65
PDI-SC-S189	Shallow Core	N/A	7630828	698942	66
PDI-SC-S191	Deep Core	-47.5	7632893	700640	67
PDI-SC-S192	Shallow Core	N/A	7633168	700669	68
PDI-SC-S198	Deep Core	-33.3	7633962	701063	69
PDI-SC-S203	Deep Core	-34.6	7634188	700563	70
PDI-SC-S213	Deep Core	-31.8	7634983	700093	71
PDI-SC-S218	Deep Core	N/A	7633085	696851	72
PDI-SC-S219	Shallow Core	-24.3	7635270	699677	73
PDI-SC-S221	Deep Core	-28.8	7633359	696916	74
PDI-SC-S222	Deep Core	-13.4	7633418	696810	75
PDI-SC-S226	Deep Core	N/A	7633678	696609	76
PDI-SC-S228	Deep Core	-17.1	7635600	697287	77
PDI-SC-S229	Deep Core	N/A	7635857	699177	78
PDI-SC-S230	Deep Core	-23.0	7636127	699520	79
PDI-SC-S232	Shallow Core	N/A	7634221	696225	80
PDI-SC-S238	Deep Core	-14.1	7636448	698736	81
PDI-SC-S245	Shallow Core	N/A	7635255	695640	82
PDI-SC-S248	Deep Core	-20.4	7636288	695194	83
PDI-SC-S251	Shallow Core	N/A	7637607	696102	84
PDI-SC-S254	Deep Core	-23.4	7637333	694600	85
PDI-SC-S255	Deep Core	N/A	7637134	694051	86
PDI-SC-S256	Deep Core	N/A	7637282	694038	87
PDI-SC-S257	Deep Core	-16.8	7637494	694352	88
PDI-SC-S260	Shallow Core	N/A	7639609	692691	89
PDI-SC-S263	Deep Core	N/A	7642066	691479	90

General Notes:

1. Conversion From CRD to NAVD88: Elevation (CRD) +5.38 ≈ NAVD88 (Geoid12b)

2. N/A = not available

Notes:

a) Vertical Datum: CRD (Columbia River Datum; Feet); based on 2009 NOAA bathymetry

b) Horizontal Projection: NAD83 (2011), State Plane Coordinate System (SPCS) Oregon North Zone (Intl Feet)

Sample names will include Station ID and depth of sampling interval.

Table 4. Field Quality Control Sample Requirements

QA/QC Sample Type	Frequency
Temperature Blanks	1 per cooler
Field Duplicates	1 per 20 samples
Field Equipment Rinsate Blanks	5 percent or 1 per week

Acronyms:

QA/QC = quality assurance/quality control

Table 5. Summary of Estimated Number of Field Quality Control Samples

Subsurface Sediment Sample Type	No. of Samples	Estimated Number of Field Weeks	Blind Field Duplicates	Field Equipment Rinsate Blanks
Deep Core Stations	393	19.6	20	20
Nearshore (Shallow) Core Stations	90	3.0	5	3
Total Count	483	22.6	25	23

Notes:

Estimated number of field weeks for one vessel; two vessels are planned to be in the field.

~~Blind~~ Field Duplicates will each be collected at a rate of 1 per 20 samples.

Rinsate Blanks will be collected at a rate of 1 per 20 samples or 1 per week or piece of equipment.

Table 6. Analysis Method, Sample Containers, Preservation, Holding Times, and Sample Volume

Sediment Parameter	Method	Container		Preservation	Holding Time	Minimum Sample Size (wet weight grams)
		Type	Size			
PCBs Aroclors	EPA 8082A	WMG	8 oz	Refrigerate, 0 to 6°C Deep Frozen (-10°C)	1 year, 1 year	100
PCDD/PCDFs	EPA 1613B	Amber Glass Jar	8 oz	Refrigerate, 0 to 6°C Deep Frozen (-10°C)	1 year, 1 year ^a	100
PAHs	EPA 8270SIM	Amber Glass Jar	8 oz	Refrigerate, 0 to 6°C Deep Frozen (-10°C)	14 days, 1 year	100
DDx	EPA 1699M			Refrigerate, 0 to 6°C Deep Frozen (-10°C)	14 days, 40 days 1 year	100
Grain size	ASTM D7928 / D 6913	G or P	16 oz	Refrigerate, 4 ± 2°C NA	6 months NA	100 to 150
Atterberg Limits	ASTM D4318	P	16 oz	NA	NA	500
Total organic carbon	Plumb 1981 / EPA 9060	WMG	4 oz	Refrigerate, 4°C Deep Frozen (-20°C) Refrigerate, 0-6°C	14 days, 1 year 28 days	25
Total solids	EPA 160.3	WMG				

General Notes:

Refrigerate preservation times consistent with PSEP protocols for Washington State.

Frozen preservation times provided from PSEP 1986.

Method detection limits presented in the project QAPP.

Selected fine-grained samples will be analyzed for Atterberg Limits.

Footnotes:

a) stored in darkness

Acronyms:

°C = degrees Celsius; DDx - sum of dichlorodiphenyltrichloroethane and its derivatives; G = glass; oz = ounce; P = plastic; PAHs - polycyclic aromatic hydrocarbon; PCBs = polychlorinated biphenyls; PCDD/Fs = polychlorinated dibenzo-p-dioxins and furans; PSEP = Puget Sound Estuary Protocol; QAPP = Quality Assurance Project Plan; WMG = wide-mouth glass